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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,800	04/15/2004	Tanya Jegeris Snyder	10030280-4	1463

7590 05/19/2006

AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

NHU, DAVID

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/826,800

Applicant(s)

SNYDER ET AL.

Examiner

David Nhu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 1-19, 24 and 25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-23 is/are allowed.
- 6) ☒ Claim(s) 20, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

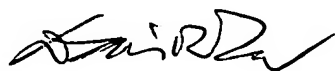
**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/461291.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_



**FINAL**

**DETAILED ACTIONS**

***Election/Restrictions***

1. Applicant's election of Group II (Claims 20-23, 26-27) without traverse is acknowledge. Claims 20-23, 26-27 are remained for examination. Accordingly, claims 1-19, 24-25 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 20, 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin et al (6,232,150 B1).

**Regarding claim 20, Lin,** (see figures 11a-11b, 13, 14a-14b, col. 4, lines 10-50, col. 12, lines 12-67, col. 13, lines 1-55, col. 14, lines 15-59), teaches a device package, comprising: a first wafer (Si Substrate); a second wafer (Micropackage Substrate) (see figure 11a), the intermetallic mixture bonding the first and the second wafers (see col. 6, lines 37-55); and a perimeter (see figure 2b) of an intermetallic mixture interposed between the first wafer and the second wafer, the intermetallic mixture comprising materials from a reactive foil (aluminum microheater) and a bonding material, the intermetallic mixture being formed after an exothermic reaction of the reactive foil (see figures 13, 14a-14b, col. 4, lines 10-35).

**Regarding claim 26**, Lin, (see figures 11a-11b, 13, 14a-14b, col. 4, lines 10-50, col. 12, lines 12-67, col. 13, lines 1-55, col. 14, lines 15-59), teaches a device package, comprising: a wafer (Si Substrate ) having metal lines (metal interconnection) (see figures 11b ) a device (MEMS); an intermetallic mixture interposed between the device and the metal lines, the intermetallic mixture bonding the device (MEMS) and the metal lines (metal interconnect), the intermetallic mixture comprising materials from a reactive foil (aluminum microheater) and a bonding material, the intermetallic mixture being formed after an exothermic reaction of the reactive foil (see figures 13, 14a-14b, col. 4, lines 10-35).

Regarding claim 27, Lin, (see figures 11a, 11b), also teaches the device is MEMES.

#### **Response to Arguments**

4. Applicant's arguments filed 4/24/06 have been considered but they are not persuasive. Contrary to the applicant's argument about claims 20, 26 in his remark, pages 5, 6. Applicant argues that Lin et al do not teach a reactive foil that produces an exothermic chemical reaction. The examiner respectfully disagrees with the remark because the fusion bonding and eutectic bonding processes used in Lin, that involves the bonding material and the microheater clearly produce an exothermic reaction wherein one embodiment, Lin teaches the bonding material is the decomposition product of a gaseous precursor which decomposes on contact with, or in the presence of, heat generated by the resistance micro-heater (col. 8, lines 20-24).

#### **Allowable Subject Matter**

5. Claim s 21- 23 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Lin does not teaches a second intermetallic mixture interposed between the device and the first wafer, the second intermetallic mixture comprising materials from a second reactive foil and a second bonding material, the second intermetallic mixture being formed after a second exothermic reaction of the second reactive foil; a second perimeter of a second intermetallic mixture interposed between the second and the first wafers.

### **Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Simon'419, Weihs'942 are cited as of interest.
7. A shortened statutory period for response to this action is set to expired 3 (three) months from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see 710.02 (b)).
8. Any inquiry concerning this communication on earlier communications from the examiner should be directed to David Nhu, (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

*The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.*

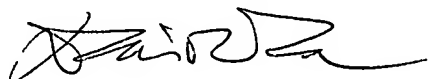
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*Information regarding the status of an application may be obtained from the patent application information retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished*

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*applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*

David Nhu



May 15, 2006